



STATEMENT OF BASIS

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BAQ Engineering Services Division

Company Name:	General Synthetic Minor Construction Permit	Permit Writer:	Mareesa Singletonn Lance Davis
Permit Number:	Asphalt Plants	Date:	Draft

GENERAL SYNTHETIC MINOR CONSTRUCTION PERMIT FOR ASPHALT PLANTS – APPLICABILITY OVERVIEW

This General Synthetic Minor Construction Permit applies to asphalt plants comprised of one or any combination of the following: systems for receiving, crushing, screening, handling, storing, weighing, drying, and transferring aggregate (virgin and non-virgin); systems for receiving, storing, and transferring asphalt cement; systems for mixing aggregate with asphalt cement; systems for the storing and dispensing of asphalt; asphalt cement and fuel storage tanks, auxiliary heaters (including hot oil heaters); and associated emission control system or other sources as approved by the Department may operate under the conditions contained herein if it meets all applicable criteria and contains no other significant sources of air emissions. A facility may operate under the conditions contained herein if it meets the following criteria, as applicable:

1. The facility is limited to hot mix asphaltic concrete production or other SCDOT approved methods as allowed in the permit. Use of any other materials will require Department approval.
2. The maximum size for a single auxiliary heater (including hot oil heaters) is limited to less than 10 million BTU/hr rated input capacity.
3. All fuel fired sources at the facility are limited to using natural gas, propane, liquefied petroleum gas, fuel oil and/or recycled oil (with written approval from the Department) as fuel. No other substances are allowed.
4. Operational restrictions and control device operation will limit emissions below major source thresholds for Title V and Prevention of Significant Deterioration (PSD). Specifically, emissions of all criteria pollutants are less than 100.0 tons per year (tpy) and less than 250.0 tpy each, any single hazardous air pollutant (HAP) is less than 10.0 tpy, and any combination of HAP's are less than 25.0 tpy.
5. The emissions from all batch mix plants (pug mills) must be routed through the dust control system and baghouse.

CHANGES TO PERMIT SINCE LAST ISSUANCE

June 2018 Changes:

1. Condition B.1. – Added emission limit demonstration requirement for temporary crushing and screening operations.
2. Condition B.4. – Added condition that details establishing differential pressure ranges for control devices
3. Condition B.11 – Clarified that RAP fractionating equipment that does not resize aggregate or nonmetallic minerals embedded in RAP are not subject to 40 CFR60 Subpart OOO.

September 2016 Changes:

1. Updated condition B.17 to incorporate the changes to S.C. Regulation 61-62.5 Standard No. 5.2.

FACILITY DESCRIPTION

Process Description

Asphalt is comprised essentially of a mixture of size-graded, high quality aggregate (which can include reclaimed asphalt pavement [RAP]), and liquid asphalt cement. The mixture is heated and mixed in measured quantities to produce the asphalt. Raw aggregate is generally stored in stockpiles near the production unit. The process begins as aggregate is hauled from the storage area to the appropriate hopper. The material is metered from the hoppers onto a conveyor belt. The next part of the process, combining of aggregate with liquid asphalt cement, depends on the type of plant which the asphalt is being produced in. There are two main types of asphalt plants, batch mix and drum mix.



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Types of Plants

Batch Mix Plants:

The material is transported into a rotary dryer. The hot aggregate leaves the dryers, it is dropped into a bucket elevator and is transferred to a set of vibrating screens to classify size and separated into bins according to size. Concurrent to the aggregate being weighed, liquid asphalt cement is pumped from a heated storage tank to an asphalt bucket where is weighed to achieve the desired aggregate-to-asphalt cement ratio in the final mix.

Drum Mix Plants:

The major difference between drum mix and batch mix is that the dryer is used not only to dry the material but also to mix the heated and dried aggregates with the liquid asphalt cement.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	Asphalt plants have potential emissions of PM, PM ₁₀ , and PM _{2.5} in excess of 250.0 TPY and CO, SO ₂ , and NO _x are in excess of 100.0 TPY. The facilities will be issued a synthetic minor construction permit with federally enforceable limits to avoid PSD, 112, and Title V major source status.
Standard No. 1	<p>Fuel Burning Operations associated with this general synthetic minor construction permit would be subject to this regulation:</p> <p>Per Section I:</p> <ul style="list-style-type: none"> - Sources constructed prior to February 11, 1971 shall not exhibit smoke which exceeds opacity forty (40) percent - Sources constructed on or after to February 11, 1971 shall not exhibit smoke which exceeds opacity twenty (20) percent <p>Per Section II:</p> <p>PM emissions for fuel burning operations of 10 x 10⁶ BTU/hr and smaller are limited to:</p> <ul style="list-style-type: none"> - 0.6 lb/million BTU heat input for sources constructed on or after February 11, 1971; - 0.8 lb/million BTU heat input for sources constructed prior to February 11, 1971. <p>Per Section III:</p> <p>SO₂ emissions are limited to 2.3 lb/million BTU heat input.</p>
Standard No. 3 (state only)	Boilers with approval to burn used Spec Oil are subject to Section III(J)(6a and 6b) of this regulation. In order to demonstrate compliance with 6b, an analysis will have to be performed that meets the requirements of SC Regulation 62.1, Section I, Definition 96 – Used Oil. The used oil definition is as follow:



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Regulation	Comments/Periodic Monitoring Requirements
	<p>Arsenic - 5 ppm max Cadmium - 2 ppm max Chromium - 10 ppm max Lead - 100 ppm max</p> <p>Nickel - 120 ppm max Total halogens - 4,000 ppm max Flash point - 100 °F minimum</p> <p>This permit limits the total halogens to only 1,000 ppm maximum because Spec Oil above this limit is considered hazardous waste which is not allowed under this permit.</p> <p>The facilities burning used Spec Oil must maintain records of the amounts received for each shipment, the usage rates of the oil generated on site, and a waste analysis on the initial shipment. The source will have to perform additional analysis if the oil becomes inconsistent in composition or is received from another supplier.</p>
Standard No. 4	All facility equipment (except boilers) will be subject to a 20% (installed after December 31, 1985) or 40% (installed on or before December 31, 1985) opacity limitation. This regulation establishes PM limits, and control requirements for hot mix asphalt plants. This regulation also requires an initial and periodic source testing every two years.
Standard No. 5	This standard applies to sources in existence prior to July 1, 1979 or July 1, 1980 (except in Anderson, Bamberg, Barnwell, Chesterfield, Darlington, and Hampton counties) with the PTE 550 lb/day or 150 lb/hr of VOCs. This construction permit is for new asphalt plants and asphalt plants do not typically have emissions at these levels therefore this regulation does not apply.
Standard No. 5.2	<p>This standard applies to any stationary source that emits or has the potential to emit NO_x generated from fuel combustion (a) constructed after June 25, 2004 or (b) any existing source where a burner assembly is replaced after June 25, 2004.</p> <p>Per S.C. Regulation 61-62.5, Standard No. 5.2, Section I(b)(16), portable sources such as asphalt plants or concrete batch plants are exempt from Section III of this standard.</p> <p>Asphalt plants are not considered a new source under this regulation and as such are not subject to Section VI (Tune-up requirements) until a burner assembly is replaced. An exemption from this requirement will be granted when a single burner assembly is being replaced in a source with multiple burners due to non-routine maintenance.</p>
Standard No. 7	Asphalt plants are not listed as one of the 28 specific industry types for which PSD applicability is triggered at 100 TPY. Facilities covered under this construction permit have potential emissions of PM, PM ₁₀ , and PM _{2.5} in excess of 250.0 TPY, and the facility is requesting a construction permit with federally enforceable limits to avoid PSD major source status. This standard does not apply.
61-62.6	Facilities will be subject to this regulation. Fugitive particulate matter emissions from this process will be controlled in such a manner that they do not create an undesirable level of air pollution.
40 CFR 60 and 61-62.60	Asphalt facilities are subject to 40 CFR 60, Subpart A and Subpart I, Standards of



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Regulation	Comments/Periodic Monitoring Requirements
	<p>Performance For Asphalt Concrete Plants, and S.C. Regulation 61-62.60 Subparts A and Subpart I. See permit for details.</p> <p>Some facilities are subject to 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants (if they utilize RAP or crush/grind any of the nonmetallic minerals specified in this standard). RAP fractionating equipment (lumpbreakers and associated screen conveying system) are not subject to this regulation if:</p> <ul style="list-style-type: none"> a) The lumpbreaker does not resize any aggregate or nonmetallic mineral embedded in the RAP, and b) Screen conveying system only delumps RAP, screens, and conveys past the point of the bin and directly into the drum for processing. <p>Lumpbreaker returns RAP to its original state when it was first placed on a roadway.</p> <p>If the temporary crushing and screening equipment is owned and operated by another company or is leased and operated by the facility, the facility shall request a copy of the test documentation to demonstrate that the equipment has passed the necessary initial performance test. The facility shall keep a copy of this test documentation for your records. If the owner of the equipment cannot provide test performance documentation, the facility is responsible for performing the initial performance test and all other temporary crushing and screening operation conditions.</p> <p>General coverage language has been added for Subpart IIII and Subpart JJJJ.</p>
40 CFR 61 and 61-62.61	Facilities covered under this general synthetic minor construction permit do not contain any applicable emissions of the pollutants subject to this standard. This regulation does not apply.
40 CFR 63 and 61-62.63	Emergency power generators less than or equal to 150 kilowatt (kW) rated capacity or greater than 150 kW rated capacity designated for emergency use only and operated a total of 500 hours per year or less for testing and maintenance with a method to record the actual hours of use such as an hour meter have been determined to be exempt from construction permitting requirements in accordance with South Carolina Regulation 61-62.1. These sources shall still comply with the requirements of all applicable regulations including Subparts A and ZZZZ.
61-62.68	Facilities covered under this general synthetic minor construction permit do not generally store or use chemical subject to 112(r) above threshold quantities. This regulation does not apply.
40 CFR 64	Facilities covered under this general synthetic minor construction permit are taking federally enforceable limits to avoid being major for Title V. This regulation applies to facilities that are major for Title V, therefore, this regulation does not apply.



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AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	Modeling demonstrations are required on a case-by-case basis. A facility's emissions and the proximity and density of residences and population centers are the criteria for determination.
Standard No. 7.c	
Standard No. 8 (state only)	

PUBLIC NOTICE

This construction permit(s) will undergo a 30-day public notice period, in accordance with SC Regulation 61-62.1, Section II.N to establish Synthetic Minor Limits. The comment period was open from June 26, 2018 to July 25, 2018 and was placed on the BAQ website during that time period.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.